

Abstract: In this thesis we introduce the halfspace median, which is one of the possibilities how to extend the classical median from a one-dimensional space to spaces with several dimensions. Firstly we deal with the halfspace depth, which is a function that assigns to each point the minimum probability of a halfspace that contains it. Then we define the halfspace median and show its existence. Partially, we also deal with special types of symmetry measures for convex sets and random vectors and what follows from them, such as when the median and the center of symmetry are the same point. We also study the boundaries that, under certain assumptions, enclose the depth. We state sufficient conditions for acquiring the halfspace median, which are determined by the so-called ray basis theorem. Finally we look at the similarities of this topic with convex geometry.